

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

26. (Original) A radio frequency data communication system for transmission of data collected by a multiplicity of mobile transceiver units, to a base transceiver, comprising:

a base transceiver selectively operable at a limited data rate and at an increased data rate;

the multiplicity of mobile transceiver units selectively operable at the limited data rate and at the increased data rate;

said mobile transceiver units responsive to transmissions by said base transceiver, and having control means therein to evaluate the feasibility of responding at said increased data rate;

said base transceiver effecting a communication link with one or more of said mobile transceiver units;

said mobile transceiver units for which a communication link with said base transceiver has not been established receiving the transmissions of said base transceiver to said mobile transceiver units with which a communication link has been established;

said mobile transceiver units evaluating for consistent reception of said transmissions to said one or more transceiver units;

said mobile units which consistently receive transmissions at the increased data rate responding to the base transceiver at said increased data rate when said base transceiver directs communication to said mobile unit.

27. (Original) The system of claim 26 wherein said mobile transceiver units independently evaluate transmissions from the base transceiver to said one or more mobile transceiver units having a communications link with said base transceiver.

28. (Original) The system of claim 26 wherein each mobile transceiver unit remains to receive data while no communication link is established between said mobile transceiver unit and the base transceiver.

29. (Original) The system of claim 26 wherein the base transceiver transmits packets of data to said one or more mobile transceiver units having a communication link with the base transceiver, each mobile transceiver unit with which a communication link has not been established:

attempting to receive packets of data transmitted by the base transceiver to said one or more units having a communication link with the base transceiver;

each mobile transceiver unit with which a communication link has not been established;

evaluating receipt of packets of data at the increased data rate and at the limited data rate.

30. (Original) The system of claim 26 wherein said mobile transceiver units which have not established a communication link with said base receiver receiving polling signals transmitted by said base transceiver at the increased data rate:

said mobile transceiver units evaluating for constant reception of said polling signals, to determine the feasibility of successful communication with said base transceiver at the increased data rate.

31. (Currently Amended) The system of claim 26 wherein said mobile transceiver sampling data transmitted to said one or more of said mobile transceiver units at said limited data rate and at said increased data rate. ~~The system of claim 26 wherein said limited data rate is 4800 baud and said increased data rate is 9600 baud.~~

32. (Original) In a radio frequency data communication system wherein a multiplicity of mobile transceiver units are to collect data and are to transmit the collected data promptly after its collection to a base transceiver station and wherein reliable communication between such mobile transceiver units and said base transceiver station could occur at a limited data rate, the invention comprising:

a base transceiver station capable of transmitting data at a limited data rate and at an increased data rate, said base transceiver station effecting a communication with at least one of the mobile transceiver units at the increased data rate;

the mobile transceiver units evaluating the communication from the base transceiver station to said at least one mobile transceiver unit to predict whether successful communication with the base transceiver station will occur at the increased data rate;

said mobile transceiver units which predict successful communication with the base transceiver station at the increased data rate responding to signals from the base transceiver station at the increased data rate;

said mobile transceiver units which fail to predict successful communication with the base transceiver station at the increased rate responding to signals from the base transmission station at the limited data rate.

33. (Original) The system of claim 32 wherein said mobile transceiver units responding at the increased data rate transmitting their identities to said base transceiver station and said mobile transceiver units responding at the limited data rate transmitting their identities to said base transceiver station.

34. (Original) The method of operating a radio frequency data communication system wherein a multiplicity of mobile transceiver units are to collect data and are to be able to transmit the collected data promptly after its collection to a base transceiver station, during movement of the mobile transceiver units at varying distances from the base transceiver station and wherein reliable communication with such mobile

transceiver units over the entire area of mobile operation could only take place a limited normal data rate, said method comprising:

in a communications interchange between the base transceiver station and one or more mobile transceiver units, effecting an RF wireless transmission from said base transceiver station in one communication direction via an RF link at a higher than normal data rate;

at a mobile transceiver unit receiving the transmission, evaluating the consistency of reception of the transmission at a higher than normal data rate to predict successful communication between a respective mobile transceiver unit and the base transceiver station at a higher than normal data rate in spite of potentially adverse transmission conditions;

If the evaluation of the received transmission determines that transmission at a high data rate would be likely to be subject to detrimental transmission conditions, transmitting a responsive RF wireless transmission in the opposite communication direction via said RF link signaling for further communications interchange at the limited normal data rate, and

if the evaluation of the received test signal determines that transmission conditions are not likely to prevent successful transmission at a high data rate, transmitting a responsive RF wireless transmission in such opposite communication direction via said RF link signaling for further communications interchange at a higher data rate substantially higher than the limited normal data rate.

37-45. (Cancelled)

46. (Original) A method of conducting wireless communication between first and second wireless communication nodes, wherein the first wireless communication node is a mobile wireless communication unit operating over a wide range of distances from the second wireless communication node, the method comprising:

at the mobile wireless communication unit, transmitting to the second wireless communication node at a relatively high data rate; and

dynamically adapting the data rate used by the mobile wireless communication unit over time in communicating with the second wireless communication node based on a quality of a varying wireless communication link therebetween.

47. (Original) The method of claim 46, wherein the quality of the varying wireless communication link is evaluated based on multiple criteria.

48. (Original) The method of claim 47, wherein the evaluation of the varying wireless communication link is effected at least partly in a way so as to evaluate multipath effects.

49. (Original) The method of claim 46, wherein the quality of the varying wireless communication link is determined at least partly in a way so as to evaluate multipath effects.

50. (Original) The method of claim 46, wherein the mobile wireless communication unit automatically adjusts operation to accommodate multiple different data rates.

51. (Original) The method of claim 46, wherein the second wireless communication node allows remote wireless communication units to communicate interactively with a computer system on a real-time basis.

52. (Original) The method of claim 51, wherein at least one of the remote wireless communication units comprises a mobile unit on a vehicle.

53. (Original) The method of claim 52, wherein the vehicle is a forklift vehicle.

54. (Original) The method of claim 51, wherein the remote wireless communication units comprise hand-held portable devices having controllers for

controlling dynamic data rate selection and for providing local processing of user and peripheral device inputs.

55. (Original) The method of claim 51, wherein the remote wireless communication units have different data rate capabilities.

56. (Original) The method of claim 51, wherein the remote wireless communication units automatically dynamically determine a data rate for successive communications with the second wireless communication node based only on evaluation of communication links therebetween in one direction only.

57. (Original) A method of conducting wireless communication between first and second wireless communication nodes, wherein the first wireless communication node is a mobile wireless communication unit operating over a wide range of distances from the second wireless communication node, the method comprising:

at the mobile wireless communication unit, evaluating a quality of a wireless communication link between the mobile wireless communication unit and the second wireless communication node, and transmitting to the second wireless communication node at a relatively high data rate where evaluated to be feasible; and

dynamically adapting the data rate used by the mobile wireless communication unit over time in communicating with the second wireless communication node based on the quality of the wireless communication link therebetween.

58. (New) The system of claim 26 wherein said limited data rate is 4800 baud.

59. (New) The system of claim 26 wherein said increased data rate is 9600 baud.

60. (New) An apparatus for conducting wireless communication, the apparatus comprising:

a first wireless communication node comprising a mobile wireless communication unit, said first mobile wireless communication unit adapted to:

evaluate a quality of a wireless communication link between said mobile wireless communication unit and a second wireless communication node, and transmit to said second wireless communication node at a relatively high data rate where evaluated to be feasible; and

dynamically adapt said data rate used by said mobile wireless communication unit over time in communicating with said second wireless communication node based on said quality of said wireless communication link therebetween.

61. (New) The apparatus of claim 60, wherein said mobile wireless communication unit capable of operating over a wide range of distances from said second wireless communication node.

62. (New) The apparatus of claim 61, wherein said quality of said wireless communication link is evaluated based on multiple criteria.

63. (New) The apparatus of claim 62, wherein said evaluation of said wireless communication link is effected at least partly in a way so as to evaluate multipath effects.

64. (New) The apparatus of claim 63, wherein said quality of said wireless communication link is determined at least partly in a way so as to evaluate multipath effects.

65. (New) The apparatus of claim 61, wherein said mobile wireless communication unit automatically adjusts operation to accommodate multiple different data rates.

66. (New) The apparatus of claim 61, wherein said second wireless communication node enables remote wireless communication units to communicate interactively with a computer system on a real-time basis.

67. (New) The apparatus of claim 66, wherein at least one of said remote wireless communication units comprises a mobile unit on a vehicle.
68. (New) The apparatus of claim 67, wherein said vehicle is a forklift vehicle.
69. (New) The apparatus of claim 66, wherein said remote wireless communication units comprise hand-held portable devices having controllers for controlling dynamic data rate selection and for providing local processing of user and peripheral device inputs.
70. (New) The apparatus of claim 66, wherein said remote wireless communication units have different data rate capabilities.
71. (New) The apparatus of claim 66, wherein said remote wireless communication units automatically dynamically determine a data rate for successive communications with said second wireless communication node based only on evaluation of communication links therebetween in one direction only.